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Appn. Filed: 12/05/2001
Appn. #: 10/679,305
Applicant: Elizabeth Gay Frayne
Title: "Manipulation of RNA Stability and Protein Synthesis Using Thio-phosphate"
Examiner: Nancy T. Vogel
Art Unit:1636

Assistant Commissioner for Patents
Arlington, Virginia, 22313

RE: Response to Office Action Dated 4/11/08

Sir:

Regarding objections based on 35 USC 112 – New matter

The examiner has raised objections to claims 8-13 of the present patent application 10/679,305 on the grounds that new matter has been introduced in modifying the claims to meet previous objections. This has not been the intent of the applicant. Below I provide background and examples in the specification that support the concepts presented in the claims. Some of the concepts are supported by the parent patent application which has already issued of US patent 7,125,982.

The present patent application concerns a method to stabilize RNA in vivo using a chemically modified phosphate or thio-phosphate as a substitute for phosphate in cells. Thio-phosphate is readily taken up into cells and competes with normal phosphate if present in the media. It is well known that ribosomal RNAs are molecularly stable in cells and have low turnover rates especially when compared with mRNA species. Each organism will have a different half-life for any given species of mRNA but one can talk about the average mRNA half-life of the total population as well as short and long lived populations. For example the decay kinetics of mRNA in Hela cells reveals two components, one with a half-life of 4 hrs and the other with a half-live of 24 hrs. Bacterial mRNAs are